AMENDMENTS TO THE CLAIMS

Please add and amend the claims as follows, and cancel the claims marked cancelled without prejudice.

1-80 (**Cancelled**)

81. (**Currently Amended**) An in vivo imaging device comprising:

a light source;

an imager comprising a plurality of pixels; and

a controller, wherein the controller is configured to, ~~during an imaging period~~ across a plurality of imaging periods, within each imaging period, operate the light source to emit white light, record, via one or more control pixels, the control pixels being a subset of the plurality of pixels, the amount of the white light that is reflected to the imaging device, control the image gain level of the imager based on the amount of the white light that is reflected to the control pixels ~~imaging device~~, and capture and transmit an image frame.

82-84. (**Cancelled**)

85. (**Previously Presented**) The imaging device of claim 81, wherein said controller is to control at least one parameter selected from the group consisting of image gain level, illumination duration and illumination intensity.

86. (**Withdrawn**) An in vivo imaging device comprising:

a light source;

an imager; and

a controller, wherein the controller is configured to detect problematic pixels in said imager, and define said problematic pixels as non-functional.

87. (**Withdrawn**) The device of claim 86, wherein said imager is configured to provide an exposure that is of a shorter duration than typically required for saturation of a functional pixel.

88. (**Withdrawn**) The device of claim 86, wherein said controller is to detect at least one pixel that reflects a saturation level above a threshold saturation level.

89. (**Withdrawn**) The device of claim 86, wherein the device is a swallowable capsule.

90. (**Currently Amended**) A method for operating an in vivo imaging device including at least one light source and an imager comprising a plurality of pixels, the method comprising:

~~during an imaging period~~ across a plurality of imaging periods:

[[,]] operating at least one light source to emit white light within an imaging period;

at a sampling instance, recording the amount of the white light that is reflected to one or more control pixels, the control pixels being a subset of the plurality of pixels ~~at least one light measuring element~~;

comparing an amount of the white light recorded at at least one sampling instance within said imaging period to a determined light saturation threshold; and

controlling the imaging device's gain factor in relation to the difference between said recorded amount of the white light ~~that is reflected to the imaging device~~ and said light saturation threshold; and

capturing and transmitting an image frame.

91. (**Previously Presented**) The method of claim 90, comprising controlling the operation of the light source in relation to the difference between said amount of light recorded and said light saturation threshold.

92. (**Withdrawn**) An in vivo imaging device comprising:

a light source;

an imager; and

a controller, wherein the controller is adapted to operate the light source to provide dark frames at determined frame intervals and record the amount of light reflected to the imager during said dark frame.

93. (**Withdrawn**) The imaging device of claim 92, wherein said dark frame includes a frame wherein a substantially inadequate amount of light is exposed by said light source.

94. (**Withdrawn**) The imaging device of claim 92, wherein said controller is capable of determining the location of the device according to said amount of light reflected to the imager during said dark frame.

95. (**Cancelled**)

96. (**Cancelled**)

97. (**Currently Amended**) A method for changing the operation mode of an in vivo device comprising an imager, the imager comprising a plurality of pixels, and a light source, the method comprising:

across a ~~series~~ plurality of imaging periods, in each imaging period, operating the light source to emit white light, recording the amount of the white light that is reflected to one or more control pixels, the control pixels being a subset of the plurality of pixels ~~the imaging device~~, in response to the recorded amount, adjusting an image gain level of the imager, and capturing and transmitting an image frame;

measuring at least one environment parameter in at least one environment surrounding the device; and

when an environmental change is determined, changing the operating mode of the device.

98. (**Previously Presented**) The method of claim 97, wherein said environmental change is at least one change selected from the group consisting of temperature change, pH level change and light level change.

99. (**Previously Presented**) The method of claim 97, wherein a controller determines when a significant environmental change is determined.

100. (**Currently Amended**) A method for changing the operation mode of an in vivo device[[,]] comprising an imager, the imager comprising a plurality of pixels the method comprising:

across a plurality of imaging periods, within each imaging period:

operating a light source to emit white light, recording the amount of white light that is reflected to one or more control pixels, the control pixels being a subset of the plurality of pixels ~~the device~~, in response to the recorded amount, adjusting a gain level of an imager within the device, and capturing and transmitting an image frame;

measuring at least one environment parameter in at least one environment surrounding the device, using at least one environment measuring tool; and

when an environmental change is determined, changing the operating mode of the device.

101. (**Previously Presented**) The device of claim 81, wherein the controller is to record the amount of the white light that is reflected to the imaging device and control the image gain level, repeatedly during a plurality of time periods during the imaging period.

102. (**Previously Presented**) The method of claim 90, wherein the controller is to record the amount of the white light that is reflected to light measuring element and control the gain factor, repeatedly during a plurality of time periods during the imaging period.